

**REMARKS:**

In the Office Action mailed July 17, 2003, the Examiner noted that claims 1-16 are pending, and that claims 1-16 have been rejected. New claims 17 and 18 have been added, thus, in view of the forgoing, claims 1-18 remain pending for which reconsideration is requested. No new matter has been added. The Examiner's rejections are traversed below.

**REJECTION UNDER 35 U.S.C. § 102 (e):**

In the first Office Action, claims 1-2, 4-6, 8-10, 12-14 and 16 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,198,837 ('837). The rejection is traversed and reconsideration is requested.

'837 discusses a method of reading and storing a medical image based on an information code associated with the medical image to allow determination of orientation of a sheet-shaped recording medium upon which the medical image is transferred. Accordingly, the method of '837 is designed to eliminate the process of visual inspection by an operator to ascertain orientation of the medical image.

The present invention is directed to an image processing method and apparatus that automatically links hierarchical attribute information associated with an image when attribute information of the image is processed.

In the outstanding Office Action, the Examiner equates the present invention's process of linking a plurality of objects having image attribute information of an image to a process of determining orientation of a medical film sheet using patient information and photographing information in '837. According to the method of '837, an image is stored after the inserted orientation of a medical film sheet is ascertained so that the image can be recorded with a simple construction without employing a machine process to provide notch on the film (see column 2, lines 32-39 of '837). This is achieved by registering a plurality of regions as candidate regions to record identification information, and then discriminating whether the film sheet is read by the reading device from its obverse side or from its reverse side based on the recognized position of the digital data of the identification code on the arrangement of digital data (see column 4, lines 30-49 and FIG. 3 of '837). Thus, the '837 method does not disclose hierarchical relationships between the stored data where there is arrangement of data having sets and subsets in which every subset of a set is of a lower rank than the set. Instead, the digital image data is stored in the form with the normally inserted orientation so that when a user reproduces the digital image data, the image is reproduced with the normally inserted

orientation.

In contrast, according to the present invention, a plurality of objects each having a pair of image data and image attribute information "are linked in form of a hierarchy structure including a parentage" so that when new object is produced, "image attribute information of the parent object" is automatically set up on the new object (see claims 1, 4, 9, and 12 of the present invention). When image attribute information of a first object that is hierarchically linked to a second object is altered, the image attribute information of the second object is altered to reflect the alteration(s) made to the image information of the first object (see claims 2 and 10). Similarly, when an "object having descendant objects" is deleted or reproduced, the deletion or reproduction is reflected in the descendant objects (see claims 3, 9, 10, and 12 of the present invention).

The present invention achieves the linkage of information "in a form of a hierarchy structure" (see claims 1, 2, 10, and 12 of the present invention) created between the plurality of objects, which allows a class of a lower rank of hierarchy to succeed to the resource of a class of an upper rank of hierarchy. For example, if object 1, which has image attribute information X, Y, Z, has a descendant object, at least one image attribute of object 1 (X, Y, or Z) are also comprised in the image attribute information of the descendant object. This allows efficient management of image attribute information of an object including altering, deleting, and reproducing the attribute information when another object containing the same image attribute information is altered, deleted, and/or reproduced. No such hierarchical relationship between the registered regions of the image film of '837 is discussed to provide linkage of information to allow efficient set up of the image attribute representative of the attribute of the image.

Further, the method and apparatus of the present invention may be applied to medical images, but it is not limited to medical images as the '837 method. This is unlike the method of '837 that is limited to a method of image recordation in a sheet-shaped recording medium, particularly, a method of storing medical image information recorded in sheet shaped recording medium.

Therefore, since '837 is directed to a method via which orientation of a film sheet mounted on a reading device is ascertained based on recognized position of an identification code, '837 does not anticipate the present invention's method of maintaining hierarchical relationships including a parentage between a plurality of objects (see claims 1, 2, 10, and 12 of the present invention).

**REJECTION UNDER 35 U.S.C. § 103 (a):**

In the outstanding Office Action, claims 3, 7, 11, and 15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,978,562 ('562). The rejection is traversed and reconsideration is requested.

'562 discusses an image drawing apparatus having first and second storages for storing first and second image information of an image to allow deletion of the second image information upon successful deletion of the first image information to efficiently execute a printing operation.

The Examiner correctly agrees that '837 does not teach an object deleting method for deleting existing objects when an object having descendant objects is deleted. The Examiner relies on '562 as providing an object deleting command that the Examiner equates to the deleting method of the present invention. According to '562, when a print command is received, image information of an object is copied (see column 4, line 66 through column 5, lines 5 of '562), and after the printing is completed, the duplicate objects are deleted (column 5, lines 27-30 of '562). This is unlike the method of "deleting existing objects...when said object deleting means deletes an object having descendant objects" (see claims 3 and 11 of the present invention). While the '562 apparatus creates duplicate copies of objects that are deleted when a print operation is completed, the present invention creates hierarchical linkage between objects to allow altering, deleting, and reproducing attribute information of the objects when another object in a higher rank that contains the same image attribute information is altered, deleted, and/or reproduced.

Thus, it is respectfully submitted that since neither '562 nor '837 disclose an image processing method for forming a hierarchical structure of an object, the present invention would not have been obvious to one skilled in the art at the time of invention. Further, because '837 deals with orientation of a medical image and '562 is directed to deletion of duplicate objects, there is no motivation to combine.

**NEW CLAIMS:**

New claims 17 and 18 have been added to highlight an aspect of the invention that enables users to control and manage image processing by "hierarchically linking a plurality of objects" to allow users to "processing the image based on the linkage of the plurality of objects". Accordingly, an object linked to another object in a higher hierarchy would be subject to all the

processing done to the other object. This is not discussed by '562 or '837.

**CONCLUSION:**

In accordance with the foregoing, new claims 17 and 18 have been added, thus, claims 1-18 are pending and under consideration.

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

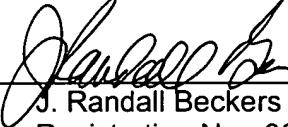
Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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Date: 1/16/4

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